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SPATIAL APPROACH TO PLANNING THE PHYSICAL ENVIRONMENT.

BY- CAUDILL, WILLIAM W., BELLOMY, CLEON C.
CAUDILL, ROWLETT, SCOTT AND ASSOCIATES, BRYAN, TEX

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THE PURPOSE OF THIS REPORT DEFINES THE SPATIAL APPROACH TO PLANNING THE PHYSICAL ENVIRONMENT AND SUGGESTS A MORE NATURAL APPROACH TO A LESS RESTRICTED ARCHITECTURE. ONE OF THE TWO BASIC ARCHITECTURAL ELEMENTS IN THE SPATIAL CONCEPT IS THE HORIZONTAL SCREEN WHICH KEEPS THE SUN AND RAIN OFF, LETS IN LIGHT, KEEPS OUT SUN HEAT, RETAINS ROOM HEAT, AND FRAMES DESIRABLE VIEWS WHILE TAKING ON ANY SHAPE OR POSITION. THE OTHER ELEMENT, THE VERTICAL SCREEN, ACTS AS A WIND BREAK, A SOUND SOURCE, THERMAL SCREEN AND VIEW SCREEN. ARCHITECTS WORK WITH THE FOLLOWING FOUR BASIC SCREEN TYPES--(1) THE TRANSPARENT SCREEN WHICH CAN SERVE AS A WIND BREAK, SOUND BARRIER, THERMAL SCREEN AND AT THE SAME TIME PERMIT A VIEW, (2) THE TRANSLUCENT SCREEN WHICH PROVIDES THE SAME EFFECTS, PERMITS LIGHT BUT ELIMINATES A VIEW, (3) THE SOLID OR OPAQUE SCREEN WHICH PROVIDES ALL THESE FUNCTIONS EXCEPT THAT IT ELIMINATES BOTH LIGHT AND VIEW, AND (4) THE PIERCED SCREEN WHICH CAN HAVE THE QUALITIES OF OPAQUENESS, TRANSLUCENCY, AND TRANSPARENCY WITH THE ADDED QUALITY OF ALLOWING AIR FLOW. THE SPATIAL APPROACH GIVES THE ARCHITECT THE FREEDOM TO BALANCE THE CONSTRUCTION BUDGET, GIVES THE EDUCATOR THE OPPORTUNITY TO PROVIDE STUDENTS COMFORTABLE AND HIGHLY FUNCTIONAL SPACES FOR LEARNING, AND LEADS TO A NEW TYPE OF UNRESTRICTED ARCHITECTURE THAT IS AS TECHNOLOGICALLY PROGRESSIVE AND INDEPENDENT AS THE CIVILIZATION WHICH IS PRODUCING IT. IN ESSENCE, THE ARCHITECT STARTS WITH ALL NATURE, KEEPING EVERYTHING DESIRABLE--SPACIOUSNESS, VIEW, NATURAL LIGHT, COMFORTING BREEZES--AND ELIMINATES ONLY THE UNDESIRABLE. (RK)

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SPATIAL APPROACH TO PLANNING THE PHYSICAL ENVIRONMENT

THE customary approach to architectural design is to start with a box. That is, most of us when we design buildings start with a preconceived architectural form, usually a boxlike shape, and then attempt to adapt this shape by punching holes in it to let in light and air and to control the view. This approach has the sanction of tradition inherited through centuries in which it was technologically necessary; but during this century technological advances have allowed the light, ventilating and viewing holes to become larger and larger until they have figuratively eaten up the walls which surround them. We no longer need the box as a starting point, and, since we do not need it, it is time we quit saying, "Let us start with a confined, dark, unventilated space and punch some holes in it so it will be less confined, dark and unventilated."

Time for a New Approach

It is time to take advantage of our technological progress and find a more optimistically positive approach and say, "Let us start with all nature, keep everything desirable—spaciousness, view, natural light, comforting breezes—and eliminate only the undesirable." This new approach would not be confined to the building lines of a cube or of any other preconceived shape; it would be a spatial approach, not a box approach. It would make us face the fact that space is fluid, without end and without an inside or outside. This spatial approach, if clearly understood by designers and laymen alike, can be the approach to a freer, more natural and more beautiful architecture.

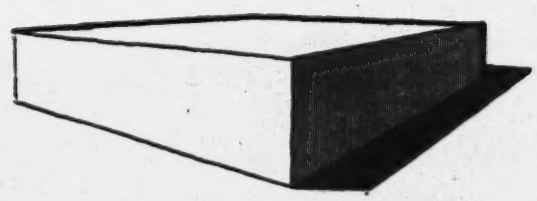
The next three pages are an attempt to explain in simple graphic terms what is meant by the spatial approach to planning the physical environment.

RESEARCH REPORT 2

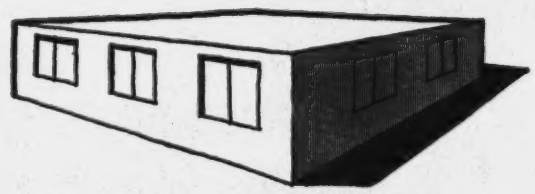
by
WILLIAM W. CAUDILL
CLEON C. BELLOMY

THE PROBLEM:

Architects impose upon themselves and their art unnecessary and unnatural restrictions when they consciously or subconsciously start with a box,

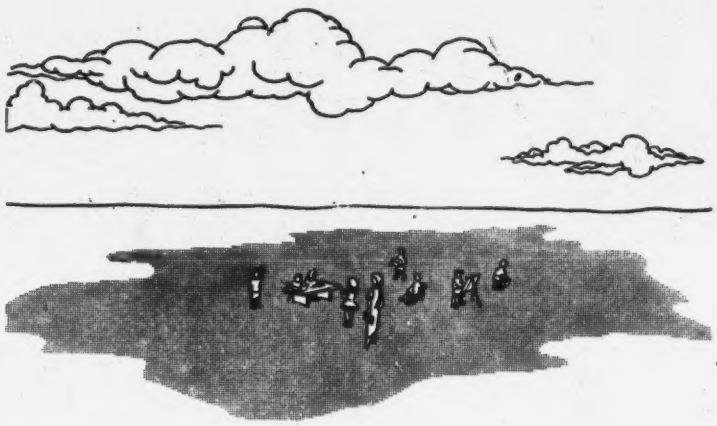


then punch holes in the box to admit desirable light, air and view.

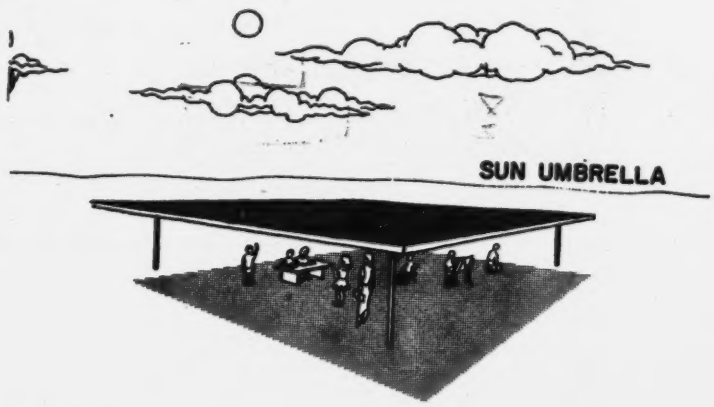


This point of view has particularly hurt educational architecture. The purpose of this report is to suggest a fresh and more natural approach to a fresh and less restricted architecture.

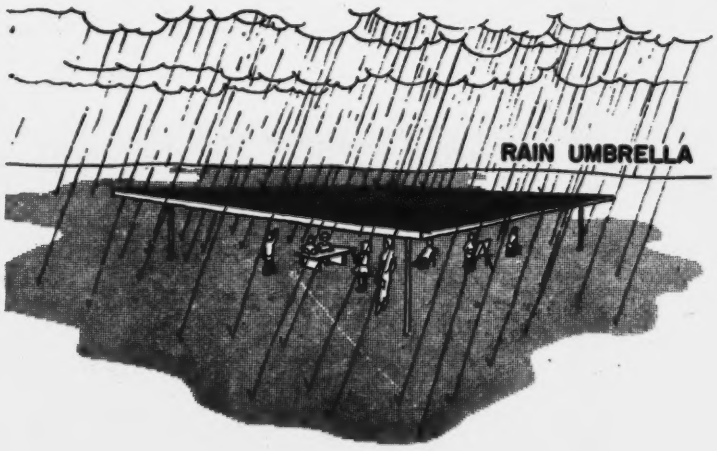
CAUDILL, ROWLETT, SCOTT,
AND ASSOCIATES
ARCHITECTS-ENGINEERS
BRYAN, TEXAS, OKLAHOMA CITY, OKLA.



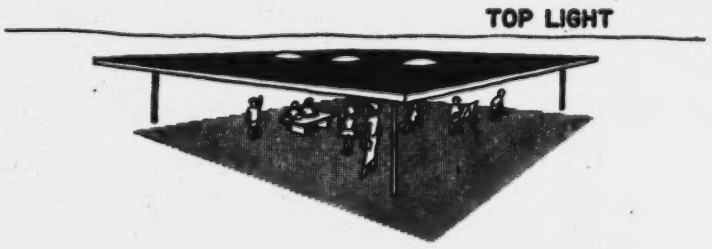
If the temperature, the breeze and the view are just right, if the sun is behind a cloud, and if the necessary teaching equipment is available, a class could very well be conducted in the middle of a pasture. And the pupils would love it!



But if the sun should come out, an uncomfortable glare condition would exist; some sort of umbrella would be needed. When one is added, the undesirable is eliminated and everything is back to maximum desirability.



The umbrella, however, cannot be just a sun shield. Suppose that all other conditions remained right, but that it started raining. The umbrella then would have to be rainproof, and it would have to be large enough to insure protection for all the children. When these alterations are made, the physical environment tends to return toward a state of maximum desirability.



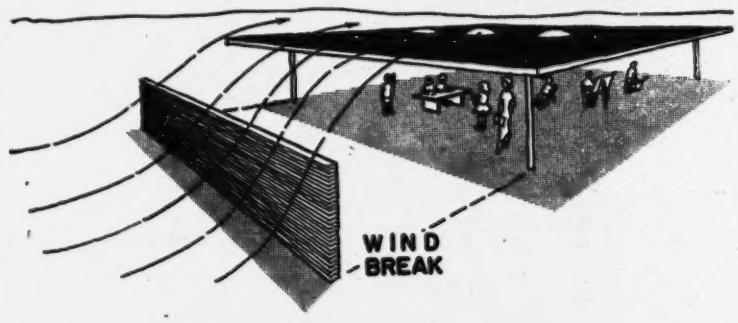
Enlarging the umbrella does not necessarily insure a return to the best physical environment because in all probability it reduces the light intensity to below the desired minimum. To correct this condition it becomes necessary to have the horizontal screen or umbrella made partially of transparent or translucent material to bring the light intensity back to its maximum desirability.

The *horizontal screen,* or umbrella, is a basic concept in the spatial approach; it is, in fact, one of the two most important architectural elements used by planners following the spatial approach.

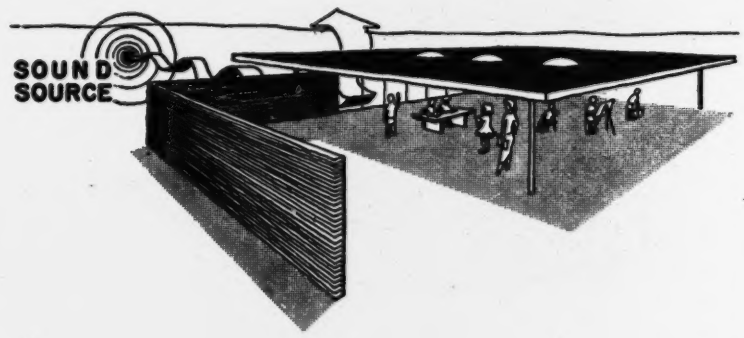
This screen serves primarily to keep the sun and rain off, but it also may be required to help let in light, to keep out sun heat or to retain room heat.

It might even be required to help frame desirable views for, though the shape shown here is a simple horizontal plane, the umbrella can be made to take virtually any shape and position.

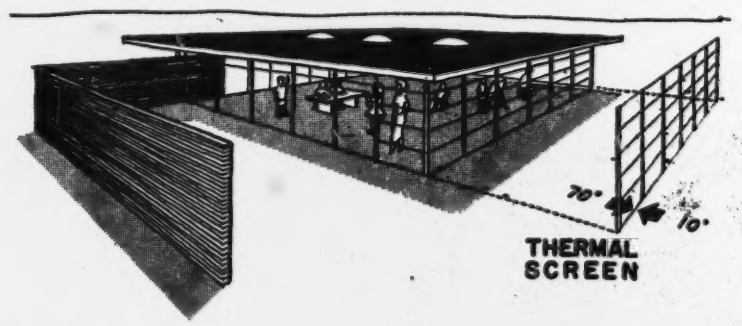
Suppose that with the help of a fully developed umbrella all physical conditions are again just right, but that the breeze increases to an undesirable speed. What is needed in this case is a vertical screen, or wind break, that would direct the wind over or around the children. This screen is not necessarily a wall located, as under the old limited concept, at the building line; it could be located there, but it could just as conceivably be placed either outside or inside the building line.



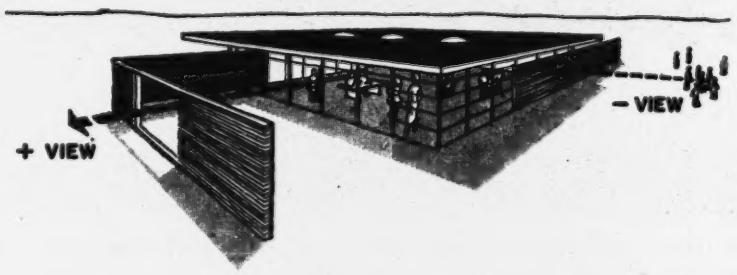
Assume next that after the addition of a wind break to bring the environment back to a state of maximum desirability, a disturbing sound source, say the noise of passing traffic, obtrudes itself. Once more a vertical screen is called upon to correct an undesirable condition, and this screen too can be placed with a new freedom—near the sound source, near the children or any place between.



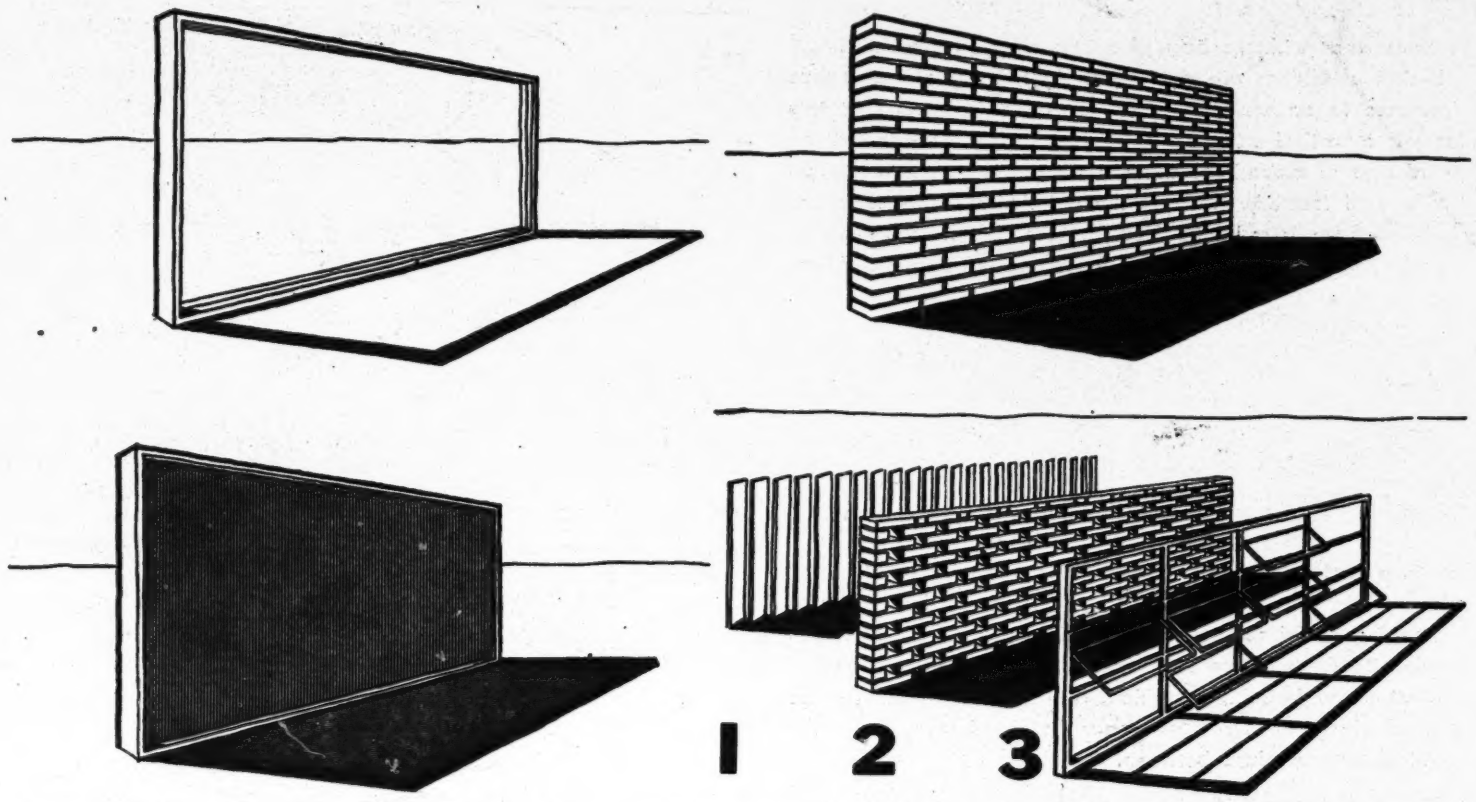
But suppose it gets cold, far colder than the 70 degrees or so wanted for comfort. This condition calls for a thermal screen. The vertical thermal screen must, of course, be at the building line and when it is connected with the umbrella, that screen too becomes a thermal screen and must be designed accordingly. What is achieved at this stage is not the old box for a number of reasons, only one of which is that if the light and view were just right, the vertical thermal screen naturally, almost inevitably, would be transparent.



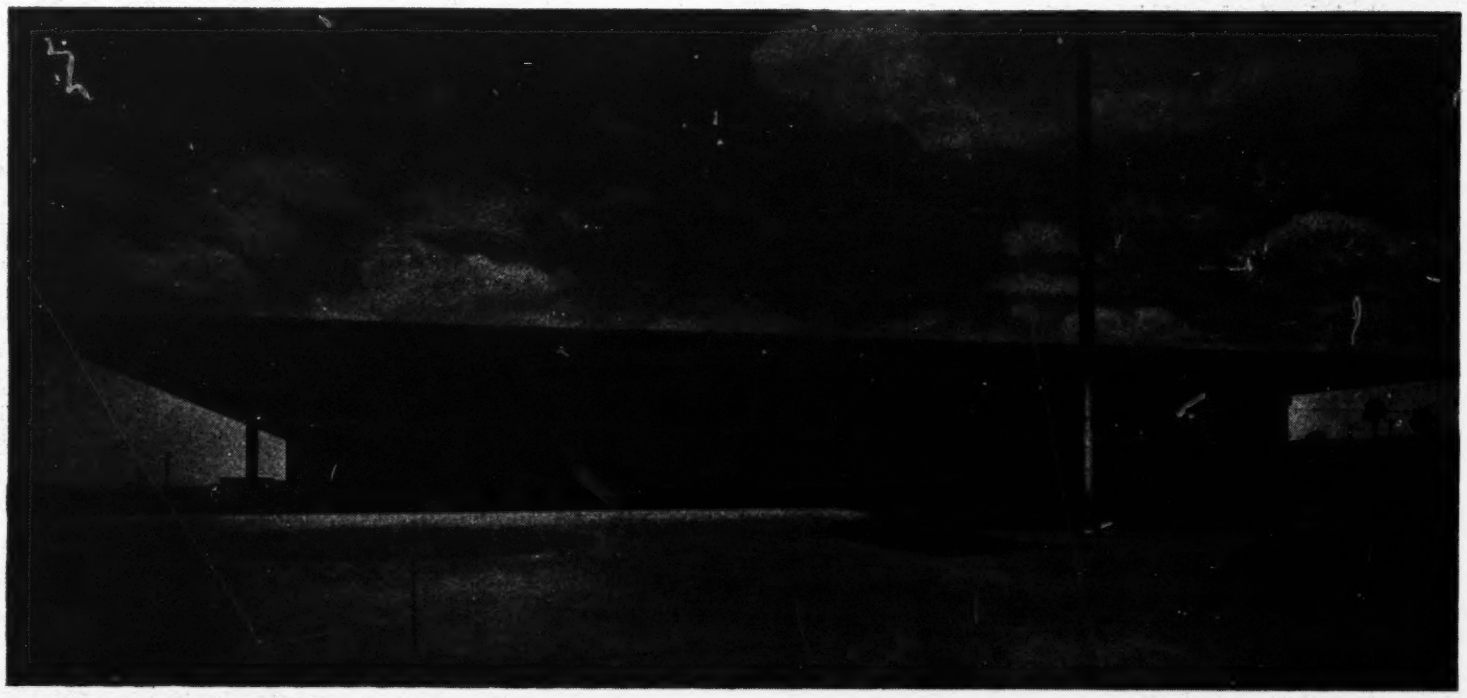
Now, in order to suggest the reasonableness and the freedom of the spatial approach, suppose that in one direction there is an unwanted view condition and that in another direction there is a very desirable view beyond a vertical screen used as a wind break. In such a case the thermal screen should be partially opaque on the one side and the wind break partially transparent on the other.



The *vertical screen* is the second basic architectural element in the concept and vocabulary of the designer following the spatial approach. This vertical screen is not necessarily a building wall, though it may often be so. The traditional wall on the other hand, though it is inevitably a screen, is usually more complicated and much less functional than the screen conceived by spatial design.



Here are the basic screen types (horizontal as well as vertical) with which the architectural composer works: top left, the transparent screen which can serve as a wind break, a sound barrier and a thermal screen, and at the same time permit a view; bottom left, the translucent screen which, in doing these same things, permits light but eliminates a view; top right, the solid or opaque screen which fulfills all these functions except that it eliminates both light and view; bottom right, the pierced screen which can have the qualities of opaqueness, translucency and transparency with the added quality of allowing air flow.



The spatial approach will lead us, as it has in this new elementary school in Laredo, Texas, to a new kind of architecture as fresh and unrestricted as the approach itself and as technologically progressive and independent as the civilization which is producing it.

The spatial approach will give the architect and the builder the needed freedom to balance the construction budget. The spatial approach will also give the educator a real chance to offer his pupils comfortable, highly functional spaces for learning.